

U.S. Serial No. 09/501,114

On page 14, starting at line 14, please delete the paragraph and insert in place thereof the following.

Typical deposition parameters are as follows:

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Microwave power	600-3000W
Vapor pressure	1 mtorr-250 torr
Substrate temperature	200° C-1600° C
Methanol	0.5-99.5% by weight
Ethanol, isopropanol, and acetone	0.5-99.5% by weight

IN THE CLAIMS

Please cancel claims 2 and 4 without prejudice or disclaimer.

Please amend claims 1, 3, 5, 8, 11, 13 and 17 as follows:

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Sub 17

1. (Amended) A method of forming diamond crystals or a diamond film comprising disposing a substrate in a reaction chamber;

introducing a liquid precursor containing methanol and at least one carbon containing compound having a carbon to oxygen ratio greater than one into an inlet of the reaction chamber;

vaporizing the liquid precursor; and

subjecting the vaporized precursor to a plasma under conditions effective to disassociate the vaporized precursor and promote diamond growth on the substrate.

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3. (Amended) The method according to claim 1, wherein methanol is present in the liquid precursor in an amount between about 0.5 wt. % to about 99.5 wt. % of the liquid precursor.

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5. (Amended) The method according to claim 1, wherein the carbon containing compound is selected from ethanol, isopropanol, acetone and combinations thereof.

8. (Amended) The method according to claim 1, wherein the carbon containing compound includes a dopant element or moiety.

11. (Amended) The method according to claim 10, wherein the electromagnetic energy has a frequency selected from the group consisting of direct current, radio frequency, and microwave.

13. (Amended) A plasma enhanced chemical vapor deposition of diamond crystals and diamond films on surfaces of a substrate comprising:

providing an apparatus including an inlet, a disassociation zone, a deposition zone and an outlet;

introducing a liquid precursor comprising methanol and at least one carbon containing compound containing a carbon to oxygen ratio greater than one into the inlet under conditions effective to vaporize the liquid precursor, flow the vaporized precursor through the disassociation zone, and through the outlet;

disassociating and reacting the vaporized precursor as vaporized precursor flows or diffuses through the disassociation zone to produce OH, H, O, and carbon containing radicals; and

transporting the radicals to the substrate in the deposition zone to produce the diamond crystals or diamond films on the surface of the substrate.

17. (Amended) The process according to claim 16, further comprising:

selecting the supplementing compounds from the group consisting of ethanol, isopropanol, acetone, and combinations thereof.